



Model 230

Model 230 tape transports are designed for today's advanced technology in industry, business, research or education; and numerous installations attest to their rugged reliability. These tape transports operate in remote controlled language laboratories and sophisticated home music systems, are used as monitors of radio broadcasts and in aviation or law enforcement communication centers. They record programs for delayed broadcasting and play in background music installations. Viking model 230 transports record and reproduce scientific and medical data, operate animated displays, record inventories or serve in dictation-transcription centers.

A heavy duty three motor tape transport, the model 230 is ideally suited for all remote controlled and automatic applications. A variety of head configurations and interchangeable head block assemblies, plus other optional features make it a highly versatile unit. New solid state modular amplifiers, monaural model RP 110 and stereo model RP 120 match 230 tape transports in dependability and design.



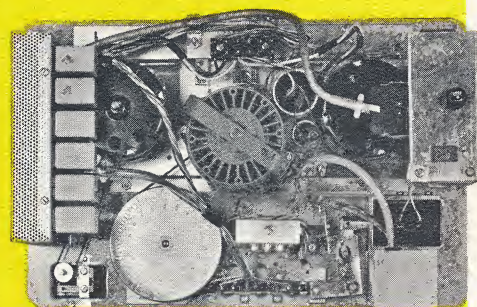
OF MINNEAPOLIS®



REGULAR 16" PANEL WITH OPTIONAL
COUNTER AND SPEED SELECTOR SWITCH



REMOTE CONTROL ASSEMBLY



MODEL 230 REAR VIEW SHOWING OPTIONAL
TWO SPEED HYSTERESIS SYNCHRONOUS
CAPSTAN MOTOR WITH SPEED SELECTOR
SWITCH ASSEMBLY AND OPTIONAL COUNTER

DESIGN FEATURES

Simple, convenient operation is the result of thoroughly practical design features in the model 230. It is entirely relay and solenoid controlled and operated by momentary electric push-buttons. It can be mounted vertically, horizontally or in any intermediate position. Model 230 features a 16" wide, stainless steel front panel. Standard EIA 19" rack mount panels are optional. Other options, accessories, head configurations and amplifiers make the model 230 adaptable to a multitude of applications.

REMOTE CONTROL

Tape motions are remote controlled with the optional, momentary push-button remote control, connected at the back of the unit. The remote control is supplied with two connector plugs (less cable) to be fitted with cables of up to 500 feet.

AUTOMATIC FUNCTIONS

Equipped with an optional, single photo electric run-out sensor, the tape transport automatically stops if the tape runs out or should break. With transparent tape spliced into the leaders, this also permits captive tape operations in which the tape never runs off the reels.

Model 230 ordered with two optional photo electric sensors includes a Re-Cue/Cycle switch providing either automatic re-cueing to the beginning of the tape or automatic continuous cycling of the tape.

Single photo sensors occupy the no. 5 head position. Two photo sensors occupy the no. 5 and 1 head positions (see head configurations).

DRIVE SYSTEM AND MOTORS

The capstan is belt driven using the Viking "flutter filter" multiple belt system. For reliable, smooth tape handling model 230 employs three motors. Each reel is driven by a four-pole induction motor, providing uniform tape tension in all modes. Standard models 230 have a four-pole, single speed capstan drive motor. Two optional motors are available; a single speed or a two speed hysteresis synchronous motor for long term speed regulation independent of line voltage. Model 230 with a two speed motor is equipped with a speed selector switch.

TAPE SPEEDS

Model 230 with a single speed capstan motor may be ordered for any one of the following tape speeds: 1-7/8, 3-3/4, 7-1/2 or 15 IPS.

With a two speed motor the 230 provides a choice of 1-7/8 and 3-3/4 or 3-3/4 and 7-1/2, or 7-1/2 and 15 IPS. and is equipped with a speed selector switch.

COUNTER

A three digit, resettable counter is optional. The counter is belt driven off the take-up reel spindle.

SPECIFICATIONS

TAPE SPEED: Single speed, 1-7/8, 3-3/4, 7-1/2 or 15 ips available. Optional two speed for 1-7/8 and 3-3/4, or 3-3/4 and 7-1/2, or 7-1/2 and 15 ips available.

CAPSTAN DRIVE: Flutter-filter belt drive.

CAPSTAN FLYWHEEL: 2 lbs., dynamically balanced.

CAPSTAN AND REEL BEARING: Oil impregnated bronze, no lubrication required.

FLUTTER AND WOW: 0.2% RMS at 7.5 IPS.

LONG TERM SPEED REGULATION: 0.5%

CAPSTAN DRIVE MOTOR: Standard 4-pole, single speed 115 V 60 cycle motor. 115 V 50 cycle, available at no extra cost. Optional HSM, single speed hysteresis synchronous motor available in 115 V 60 cycle or 230 V 50 cycle. Optional HSM two speed hysteresis synchronous motor available in 115 V 60 cycle or 230 V 50 cycle.

SPOOLING MOTORS: Standard 4-pole induction motors 115 V 50/60 cycle. Units ordered for 230 V operation are equipped with 230 V 50/60 cycle spooling motors.

BRAKE: Differential balanced braking, self energizing

in the event of power failure. Stop 0.2 sec. from play mode; 2 sec. from fast forward or rewind.

REEL SIZE: 7 inches maximum.

FAST FORWARD OR REWIND: 1200 ft. reel, 45 sec.

HEADS: Laminated, hyperbolic-ground, no pressure pads required. Head complements: five heads maximum, four heads with photo-electric or mechanical tape shut-off, three heads with two photo-electric sensors.

POWER SUPPLY: 24 volt d.c., full wave, one ampere.

CONTROLS: Momentary push-button relay; Rewind, Stop, Play, Fast Forward.

POWER REQUIREMENT: 115V 60 cycle, 150 watts maximum. 115V 50 cycle and 230V 50 cycle available. See also motor options.

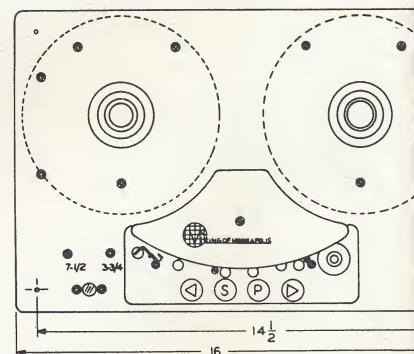
DIMENSIONS: 16" wide x 10 1/2" high x 6" deep behind panel, 8" overall depth. Optional rack mount panel as above but standard EIA 19" wide.

WEIGHT: 22 lbs.

PANEL FINISH: Stainless steel.

PORTABLE CASE: Removable front and back covers; carrying handles on each side. Dimensions with covers: 20" wide, 20" high, 12 1/2" deep. Weight of case only: 20 1/2 lbs. With equipment: 65 lbs. maximum.

DIMENSIONS



MODEL 230 DIMENSIONS WITH REGULAR 16" V

MODEL 230 WITH STANDARD EIA RACK MOUN

TAPE LIFTERS AND TENSION

Mechanical tape lifters separate the tape from the heads during fast-forward and rewind modes to avoid head wear and "chatter".

Tension pads at the tape guides provide uniform tape flow during normal operating speeds regardless of the amount of tape on the supply reel.

BRAKE SYSTEM

High efficiency is attained with the Model 230 brake system providing instantaneous stop from play mode; two seconds from fast forward or rewind. This solenoid actuated, self energizing common brake system is fail safe and provides differential braking under all operating conditions, including power failure.

POWER SUPPLY

A built-in 24 volt dc, full wave, one ampere power supply is included in all standard 230 tape transports, eliminating ac control wiring in remote controlled installations. Model 230 is also available without the built-in power supply for applications where several transports use a common power supply control as in a language laboratory. Such common power supplies are available upon consultation with Viking.

MECHANICAL RUN-OUT SWITCH

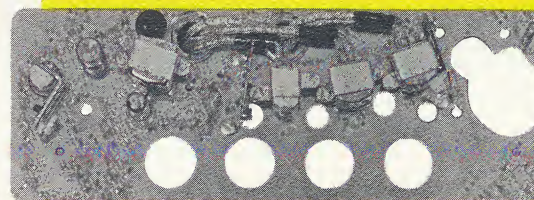
The optional, mechanical tape run-out switch is a feeler actuated by the tape and stops the transport if the tape runs out or should break. The mechanical switch occupies the no. 5 head position.

SERVICE AND MAINTENANCE

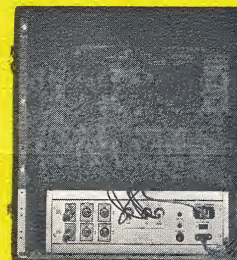
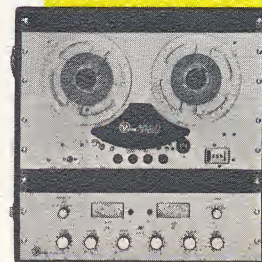
Model 230 is designed for easy service and maintenance. All assemblies are accessible from the back. The power assembly, connected through a single standard plug connector, is easily removed. Wiring connections of the control assembly are through a standard connector, screw terminals and wire nuts. Relays are of the plug-in type, with removable covers. The entire head block assembly is removable and interchangeable.

PORTABLE CASE

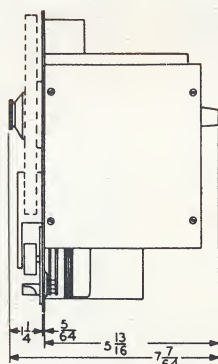
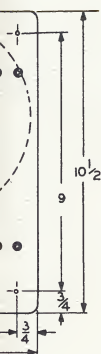
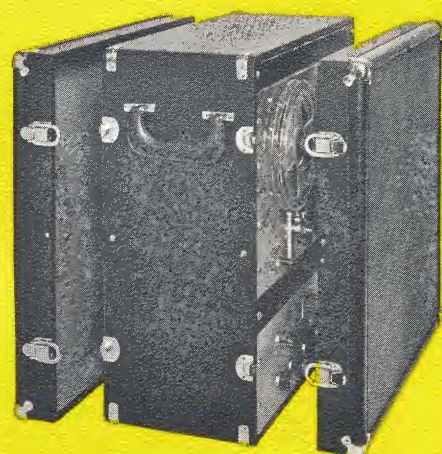
Where portability is desired Model 230 with rack mount panel and either a monaural RP 110 or stereo RP 120 amplifier is installed in a wood case covered in attractive black vinyl. The case comes with detachable covers at front and back for convenient accessibility to operating controls, input or output connections. Screened filler panels provide ample ventilation for the installed equipment.



HEAD BLOCK WITH SINGLE PHOTO ELECTRIC RUN-OUT SENSOR



FRONT, BACK AND
SIDE VIEW OF 230 WITH
RP 120 IN PORTABLE
CASE "100".



WIDE PANEL.

PANEL SAME AS ABOVE BUT 19" WIDE

ORDERING INFORMATION

The price is the accumulative total of the basic transport plus options and cost of the selected head configuration. Viking equipment is sold only with heads.

To avoid delays when ordering equipment please specify accurately:

- 1) Regular 16" or optional 19" Rack Mount Panel.
- 2) Head Configuration and Impedance.
- 3) Standard or Optional Capstan Motor.
- 4) Tape Speed(s).
- 5) Required Power Voltage and Cycles.
- 6) Type of Optional Tape Run-Out.
- 7) Optional Digital Counter.
- 8) Optional Remote Control.
- 9) All Desired Options on RP 110 or RP 120 Amplifiers.
- 10) When ordering portable case only, specify optional screen filler panel sizes.

HEAD BLOCK ASSEMBLY

The 230 tape transport is designed for hyperbolic heads without pressure pads. All models 230 are equipped with a unitized head block assembly which may be interchanged or replaced. Heads are pre-aligned and azimuthed on these assemblies and connect through a jack panel. The head block assembly provides five positions. An optional photo sensor or mechanical run-out switch occupies the no. 5 position. The no. 1 position is normally fitted with a magnetic head except on models equipped with a second photo sensor. If the model 230 is to be operated with more than one type of head (half track and quarter track for example), interchangeable head assemblies are recommended. A single transport can thus be used for varied applications.

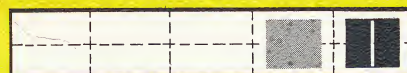
Only the FTRM, RM, ESM and RMQ low impedance head configurations shown below match the RP 110 and RP 120 solid state amplifiers.

CONFIGURATION	HEAD POSITIONS:	WITH BASIC TRANSPORT	ADDITIONAL HEAD BLOCK ASSEMBLIES
	5 4 3 2 1		
230 FTRM Full Track, Erase, Record, Play-Or-Monitor		\$379.25	\$114.50
230 RM Half Track, Mono Erase, Record, Play-Or-Monitor		\$346.75	\$75.50
230 ESM Half Track Stereo Erase, Record, Play-Or-Monitor		\$367.95	\$102.25
230 RMQ Quarter Track Stereo Erase, Record, Play-Or-Monitor		\$353.25	\$88.50

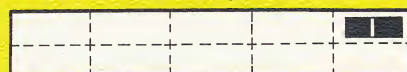
While the low impedance configurations shown above are considered standard, these and other configurations are available in either high impedance for vacuum tube electronics or in low impedance for solid state electronics. Suggested configurations are shown at right (Not Compatible with RP 110 or RP 120). Prices quoted on request.

SUGGESTED CONFIGURATIONS

230 FTR Full Track Erase, Record/Play



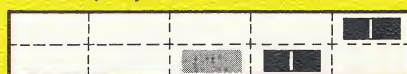
230 P Half Track Mono Play



230 R Half Track Mono Erase, Record/Play



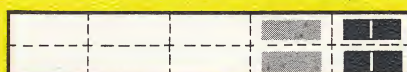
230 BE Half Track Erase, Record/Play Track Two, Play Track One



230 EB Half Track Two Channel Erase, Record/Play



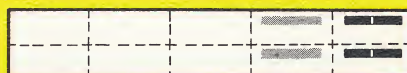
230 ES Half Track Stereo Erase, Record/Play



230 Q Quarter Track Stereo Play



230 HQ Quarter Track Stereo Erase, Record/Play



230 EQQ Four Channel - Staggered Quarter Track - Erase, Record/Play



230 QQR Four Channel Simultaneous Erase, Record, Play-Or-Monitor



OPTIONS AND ACCESSORY PRICES

CAPSTAN MOTOR OPTIONS

Single speed, 4-pole motor, 115V 50 cycle. Specify with order.....	No Extra Cost
Single speed, 4-pole motor 230V 50 cycle.	Add \$10.55
Single speed hysteresis synchronous motor 115V 60 cycle.....	Add \$33.75
230V 50 cycle.....	Add \$35.45
Two speed hysteresis synchronous motor (speed selector switch included). 115V 60 cycle.....	Add \$50.56
230V 50 cycle.....	Add \$65.45

OPTIONS AND ACCESSORIES*

19" EIA Rack Mount Panel (not an "Adaptor").....	Add \$ 2.06
Mechanical Run-Out (occupies one head position).....	Add \$ 6.31
Single Photo Cell Run-out (occupies one head position).....	Add \$18.95
Two Photo Cell Run-out, Re-cue/Cycle switch included (occupies two head positions).....	Add \$36.00
Remote Control (connector plugs supplied less cable).....	Add \$38.30
Three Digit Counter.....	Add \$ 9.10
Portable Case #100 (screened filler panels included when ordered with equipment).....	Price \$59.50
On orders without equipment, filler panels extra.....	Add \$ 3.00

*If 24V dc power supply is not required deduct \$13.45.

SOLID STATE MODULAR

Two amplifiers, monaural RP 110 and stereo RP 120 match the model 230 FTRM, RM, ESM and RMQ configurations. These new Viking tape recording and playback amplifiers are completely transistorized and incorporate the latest modular design concepts. RP 110 and RP 120 are electrically interlocked with the 230. Either amplifier exceeds NAB standards and records and plays tapes of highest professional quality.

Solid state circuitry on etched, glass epoxy plug-in boards provide an exceptionally clean amplifier layout. Two inputs (per channel) for line and microphone are provided on the rear panel with optional, readily interchangeable plug-in modules and separate controls for mixing. Other features include two speed equalization switch, "A-B" monitor switch, head phone jack, illuminated ASA standard precision VU meters and illuminated record push-buttons. Connecting cables for model 230 are included.

AMPLIFIER SPECIFICATIONS

FREQUENCY RESPONSE:*

30-16,000 CPS $\pm$ 2DB at 7-1/2 IPS.

30-10,000 CPS $\pm$ 2DB at 3-3/4 IPS.

SIGNAL-TO-NOISE RATIO:

55DB or better below peak recording level at 7-1/2 IPS.

OUTPUTS:*

 (PER CHANNEL)

+4 VU into 600 ohm load. Connectors; type XL-3 male (EIA standard).

Head Phone Jack - 600 ohm nominal.

INPUTS:*

 (PER CHANNEL)

1) High level: Unbalanced bridging, 150 K ohm impedance, 100 MV sensitivity.

2) Low level: High impedance unbalanced microphone, 200 K ohm 1MV sensitivity.

Connectors; type XL-3 female (EIA standard).

DISTORTION:

1% total harmonic distortion, record/play at 1,000 CPS at 7-1/2 IPS at 0 VU.

EQUALIZATION:*

 NAB and EIA standard.

RECORD INTERLOCK:

 Relay controlled.

BIAS/ERASE OSCILLATOR:

100 KC High-Q Low distortion push-pull solid state circuit. Adjustment at rear panel.

CONTROLS:

Separate controls for Play, both inputs (per channel), Equalization, Record level, Monitor. Sound-on-sound on RP120 only.

INTERNAL TRIMMING ADJUSTMENTS:

Play equalization; record level; bias trap.

HEADS:*

Supplied adjusted for half track optimum heads.

CIRCUITRY:

 Completely solid state.

POWER:*

110-120V AC 50/60 cycle; 20 watts maximum. Fuse - 0.5A, slow blow line fuse; Receptacle - switched AC for transport; Cord - supplied with 6 ft. removable AC cord.

DIMENSIONS:

Standard EIA rack mount panel. Height 5-1/4"; Width 19"; Depth 8" behind panel (allow 3" additional for connectors). 3/4" in front of panel.

PANEL FINISH:

 Stainless Steel.

WEIGHT:

 16 lbs. net. 20 lbs. in shipping carton.

*OPTIONS AND ACCESSORIES

EQUALIZATION:

Option # E1 - Factory adjusted for 1-7/8 and 3-3/4 IPS.

Option # E2 - Factory adjusted for 7-1/2 and 15 IPS.

OUTPUT LINE:

Option # L1 - Factory set, 150 to 250 ohm balanced line output, +4 VU nominal.

HEAD ADJUSTMENT:

Option # H1 - Factory adjusted for full track optimum heads on RP 110 only.

Option # H2 - Factory adjusted for quarter track stereo optimum heads on RP 120 only.

POWER:

Option # V2 - 220 to 240 V AC 50/60 cycle.

PLUG-IN INPUT MODULES: Each input (2 per channel) accepts any one of the plug-in accessory options.

Option # P1 - (One per channel supplied on standard amplifiers). Unbalanced bridging 150 K ohm, 100 MV sensitivity.

Option # P2 - Balanced bridging 10 K ohm, transformer isolated for 150 to 600 ohm lines - 20 DBM to + 10 DBM.

Option # P3 - (One per channel supplied on standard amplifiers). High impedance unbalanced microphone, 200 K ohm 1 MV sensitivity.

Option # P4 - Low impedance balanced microphone, 50 to 250 ohm, -70 to -30 DBM.

ORDERING INFORMATION AND PRICES

Please read all specifications carefully. If any options or accessories are required specify these clearly when ordering.

STANDARD RP 110 Price \$299.00

STANDARD RP 120 Price \$399.00

If other than standard, specify with order:

EQUALIZATION #E1 or #E2; OUTPUT LINE #L1;

HEAD ADJUSTMENT #H1 or #H2; POWER #V2.

REQUIRED PLUG-IN INPUT MODULES #P1

#P2

#P3

#P4

NO EXTRA COST

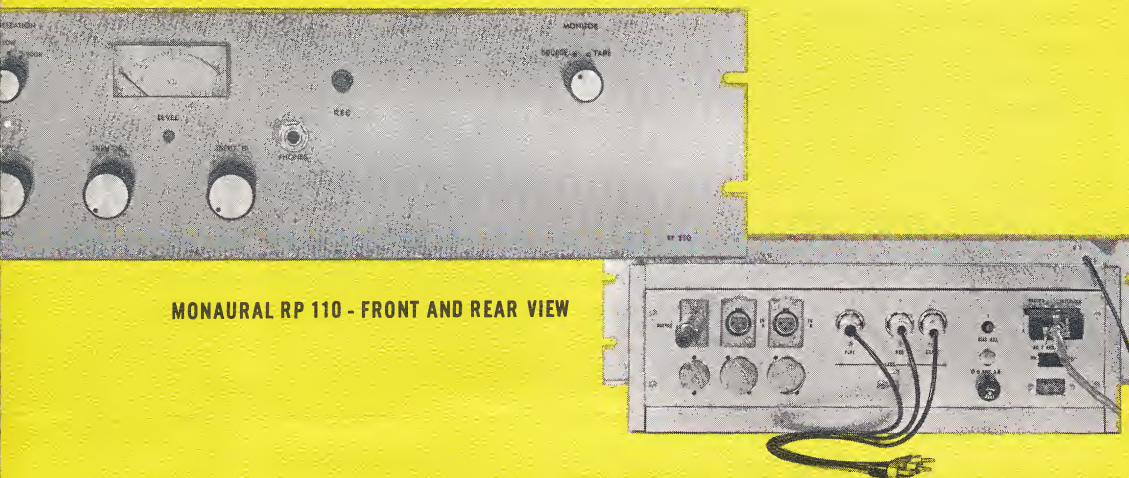
ADD \$ 2.00 PER INPUT

ADD \$23.50 PER INPUT

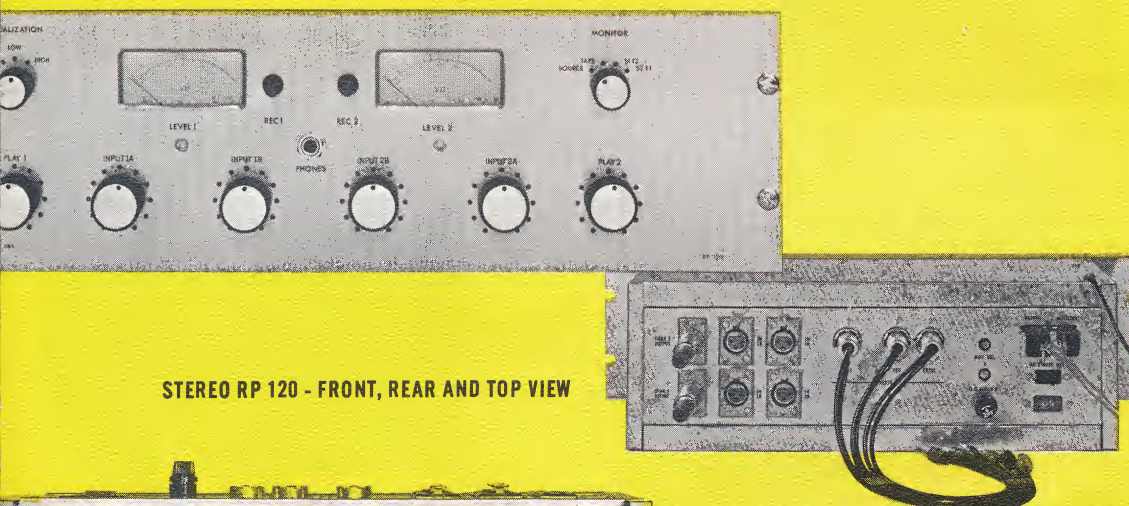
ADD \$16.00 PER INPUT

ADD \$30.00 PER INPUT

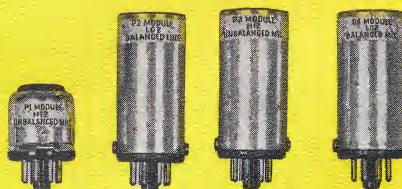
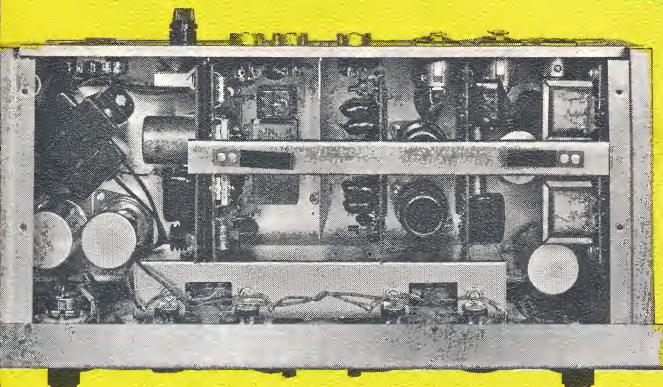
ELECTRONICS FOR MODEL 230



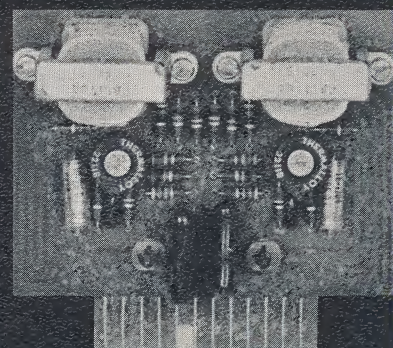
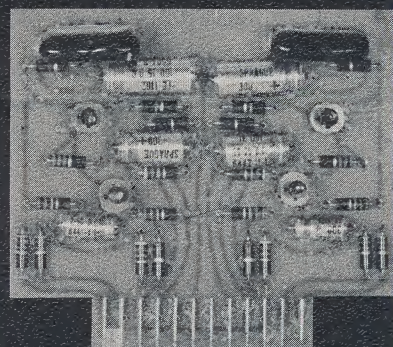
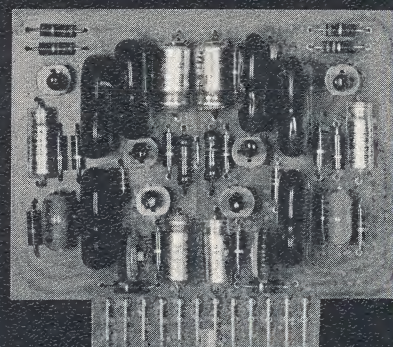
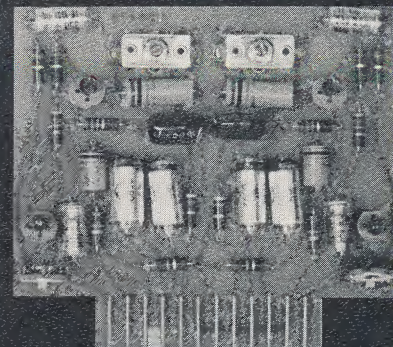
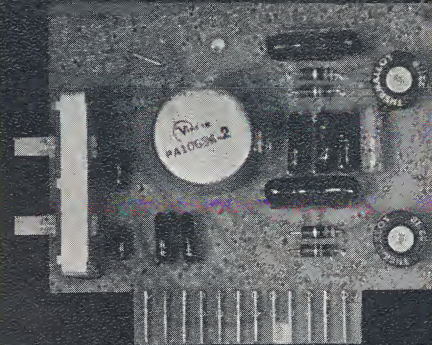
MONAURAL RP 110 - FRONT AND REAR VIEW



STEREO RP 120 - FRONT, REAR AND TOP VIEW



INPUT MODULES



Viking reserves the right to improve its products without incurring the obligation to incorporate these improvements in products already sold. Specifications and prices listed herein are subject to change without notice.



Viking OF MINNEAPOLIS
9500 Aldrich Ave. S. Minneapolis, Minnesota 55420